HIS TIMESHARING ON 08/10/91 AT 10.490 CHANNEL 3601 TS1

CALLSGN: WNSX646 CP-NR: 00 NAME: CAPITOL RADIOTELEPHONE INC

FILE-NR: 9102018410 DB-ID: L DBA: CAPITOL PAGING

LIC-STR: 1420 KANAWHA BLVD E CITY: CHARLESTON
ST: WV
ZIP: 253010000 TYPE-APPL: C AUTH-TYPE: L ISSUE-DATE: 910508 EXP-DATE: 960508
SRV: IB DATE-LST-CHG: 910508 PURPOSE: M NEPA: N
#-MOB-VEH: #-MOB-PORT: #-MOB-AIR: #-MOB-MAR:
#-MOB-PG: 500

FREQ-ADV-COMM: 910140200
CONTROL-PTS: 1420 KANAWHA BLVD CHARLESTON WV

SPECIAL-COND:

ADMIN-NOTES:

LIC-PRINT-DATE: 910509

********** **********
TX-STATE: WV TX-COUNTY: KANAWHA
TX-ANTENNA-LATITUDE: N-38-22-36 TX-ANTENNA-LONGITUDE: W-081-42-09
TX-ANT-STR-ADDRESS: 800 BLK NEASE DR 900 N 7TH AVE 100 watts
TX-ANT-CITY: CHARLESTON TX-TYPE:
TX-PAINT/LIGHTING-SPECS: 001003011021 TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 940 TX-HGT-GRND-TO-TIP: 115
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 283 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 910508
OUT-POWER: W350.00000X ERP: W350.00000
EMISSIONS: 20K0F9W RECEPT-PTS: 100 watts out
TX-ACC-CODES: TX-AUTH-CODE:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 910508
OUT-POWER: W350.00000X ERP: W350.00000
EMISSIONS: 20K0F1D 20K0F3E 20K0F2D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********
TX-STATE: WV TX-COUNTY: CABELL
TX-ANTENNA-LATITUDE: N-38-23-28 TX-ANTENNA-LONGITUDE: W-082-29-10
TX-ANT-STR-ADDRESS: 1.5 MI S OF HUNTINGTON AIRPORT ? ? ?

TX-ANT-CITY: HUNTINGTON TX-TYPE:
TX-PAINT/LIGHTING-SPECS: TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 934 TX-HGT-GRND-TO-TIP: 65
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 119 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 910508

OUT-POWER: W350.00000X ERP: W350.00000
EMISSIONS: 20K0F9W RECEPT-PTS:
TX-ACC-CODES: TX-AUTH-CODE:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 910508
OUT-POWER: W350.00000X ERP: W350.00000 16 watts out
EMISSIONS: 20K0F1D 20K0F3E 20K0F2D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

END OF DATA

CALLSGN: WNJN621 CP-NR: 00 NAME: RAM TECHNOLOGIES INC

FILE-NR: 9003188205 DB-ID: L DBA: RAM PAGE

LIC-STR: 2025 13TH ST POB 1760 CITY: ASHLAND
ST: KY
ZIP: 411051760 TYPE-APPL: C AUTH-TYPE: L ISSUE-DATE: 900524 EXP-DATE: 950524
SRV: IB DATE-LST-CHG: 900525 PURPOSE: S NEPA: N
#-MOB-VEH: 6 #-MOB-PORT: #-MOB-AIR: #-MOB-MAR:
#-MOB-PG: 2500

FREQ-ADV-COMM: 900230169
CONTROL-PTS: 2025 13TH ST ASHLAND KY

SPECIAL-COND: SP:PAINTING/LIGHTING AT BURLINGTON & PARKERSBURG SITES PARA A MOD
IFIED TO REQUIRE USE OF L-866 IN LIEU OF L-856 MEDIUM INTENSITY LIGHTING AT THE
ADMIN-NOTES: SUP:THIS LICENSE SUPERSEDES AND REPLACES AUTHORIZATION OF SAME DA
TE AND FILE NUMBER TO ADD SPECIAL CONDITION. CAB 05/25/90

LIC-PRINT-DATE: 900525

TX-STATE: OH TX-COUNTY: LAWRENCE
TX-ANTENNA-LATITUDE: N-38-25-27 TX-ANTENNA-LONGITUDE: W-082-32-04
TX-ANT-STR-ADDRESS: 4500' NE OF RT 52 & MACEDONIA RD

TX-ANT-CITY: BURLINGTON TX-TYPE:
TX-PAINT/LIGHTING-SPECS: A H TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 930 TX-HGT-GRND-TO-TIP: 180
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 300 RADIUS-OF-OP:
75RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00460.75000 CLASS-STN: FXO NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W020.00000X ERP: W120.00000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

FREQ-LOWER: M00463.83750 CLASS-STN: MO NR-UNITS: 6
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W002.00000X ERP:
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********
********** **********
TX-STATE: OH TX-COUNTY: LAWRENCE
TX-ANTENNA-LATITUDE: N-38-25-27 TX-ANTENNA-LONGITUDE: W-082-32-04
TX-ANT-STR-ADDRESS: 4500' NE OF RT 52 & MACEDONIA RD

TX-ANT-CITY: BURLINGTON TX-TYPE:
TX-PAINT/LIGHTING-SPECS: A H TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 930 TX-HGT-GRND-TO-TIP: 270
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 300 RADIUS-OF-OP:
75RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********

TX-STATE: WV TX-COUNTY: KANAWHA
TX-ANTENNA-LATITUDE: N-38-23-11 TX-ANTENNA-LONGITUDE: W-081-50-28
TX-ANT-STR-ADDRESS: COAL MOUNTAIN 1.5 MI SE OF RT 60

TX-ANT-CITY: SAINT ALBANS TX-TYPE:
TX-PAINT/LIGHTING-SPECS: TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 1000 TX-HGT-GRND-TO-TIP: 100
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 100 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********

TX-STATE: WV TX-COUNTY: KANAWHA

TX-ANTENNA-LATITUDE: N-38-22-32 TX-ANTENNA-LONGITUDE: W-081-39-26
TX-ANT-STR-ADDRESS: .35 MI SE OF INT CHANDLER DR & SUGARCREEK RD

TX-ANT-CITY: CHARLESTON TX-TYPE:
TX-PAINT/LIGHTING-SPECS: TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 1020 TX-HGT-GRND-TO-TIP: 120
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 190 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********
TX-STATE: OH TX-COUNTY: SCIOTO
TX-ANTENNA-LATITUDE: N-38-44-49 TX-ANTENNA-LONGITUDE: W-082-58-13
TX-ANT-STR-ADDRESS: COR 17TH & HIGH STS

TX-ANT-CITY: PORTSMOUTH TX-TYPE:
TX-PAINT/LIGHTING-SPECS: 001003012021 TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 780 TX-HGT-GRND-TO-TIP: 303
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 300 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********
TX-STATE: WV TX-COUNTY: WOOD
TX-ANTENNA-LATITUDE: N-39-09-52 TX-ANTENNA-LONGITUDE: W-081-37-02
TX-ANT-STR-ADDRESS: LOCUST RIDGE S

TX-ANT-CITY: PARKERSBURG TX-TYPE:
TX-PAINT/LIGHTING-SPECS: A TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 940 TX-HGT-GRND-TO-TIP: 100
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 100 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

********** **********

TX-STATE: KY TX-COUNTY: FLOYD
TX-ANTENNA-LATITUDE: N-37-48-58 TX-ANTENNA-LONGITUDE: W-082-48-05
TX-ANT-STR-ADDRESS: .25 MI FROM INT OF 1428 & US 23 AT AUXIER RD

TX-ANT-CITY: PRESTONSBURG TX-TYPE:
TX-PAINT/LIGHTING-SPECS: TX-STN-NM:
TX-ANT-FCCID:
TXMTR-FCCID:
TX-HGT-AMSL: 1373 TX-HGT-GRND-TO-TIP: 150
TX-EFFECTIVE-HGT:
TX-HGT-AAT: TX-ELEV-ANGLE:
TX-MAX-EFF-HGT:
MAX-RAD-SCTS: STRCT-HGT: 150 RADIUS-OF-OP:
RATED-POW:
TX-AREA-OF-OP:

FREQ-LOWER: M00152.48000 CLASS-STN: FB6C NR-UNITS: 1
WAIVER-CODE:
FREQ-HIGHER: CM-COORD: FRST-USE: 900524
OUT-POWER: W350.00000X ERP: K001.40000
EMISSIONS: 20K0F3E 20K0F2D 20K0F1D RECEPT-PTS:

TX-ACC-CODES: TX-AUTH-CODE:

END OF DATA

CALSGN

TP GENERAL RETRIEVAL MENU

A CALL SIGN B CALL SIGN (SHORT FORM) C FOB CALL SIGN

ORIGINAL

DECLARATION OF BILLY C. McCALLISTER

Billy C. McCallister hereby states under penalty of perjury as follows:

My name is Billy C. McCallister. I work as a technician for Electronic Services, Inc., 4206 Spring Hill Avenue, South Charleston, West Virginia 25309, telephone 304-768-3241. Electronic Services, Inc. is the company which Capitol Paging contracts with to handle its radio frequency technical matters. I hold a General Class Radiotelephone Operators license and previously held a First Class Radiotelephone Opertors license. I am a NABER-certified electronics technician and a NARTE-certified technician, first class. I have installed and maintained all kinds of land mobile radio systems for nearly 30 years.

I personally installed and maintained Capitol Paging's private carrier paging system operating on 152.48 MHz at Charleston and Huntington, including the Relm Communications RH256NB transceiver used as the system's channel monitoring receiver and transmit inhibitor.

I understand that the FCC hearing order in this case states that the inhibitor used by Capitol "consisted of a modified scanning receiver with a totally functioning front panel squelch control," that the "squelch setting affects whether the receiver detects a signal," and that the inhibitor "could be ... completely functionally disabled by an

Federal Communications Commission

Docket No. 93-231 Exhibit No. Cap 21

Presented by Capital

Disposition { Identified FEB 02 [redacted]
Received ✓ 2/4/94
Rejected

Reporter A. Walker

Date FEB 02 [redacted]

ORIGINAL

improper squelch setting on the front panel". These statements are basically not true.

First of all, Capitol Paging's receiver/inhibitor was a Relm Communications transceiver, Model RH256NB, not a "modified scanning receiver". Also, when I installed the private carrier paging system, I modified the Relm unit by installing a carrier operated relay switch behind the squelch circuit. When a signal was detected in the receiver portion of the unit, independent of the particular squelch setting, the switch would close and prevent Capitol Paging's paging terminal from operating the base stations. If the squelch was opened to the point that noise was audible in the receiver's speaker, it would act just like a signal had been detected and the switch would close and inhibit transmissions. In the other direction, the squelch could not possibly be closed down tight enough, even at its maximum setting, to block out RAM's signal.

Therefore, it is simply not true that Capitol Paging's inhibitor "could be ... completely functionally disabled by an improper squelch setting on the front panel". Also, I programmed all 16 channels on the unit for the same frequency, 152.48 MHz, so that the inhibitor would work like a fixed tuned receiver and could only monitor that frequency for signals at all times.

Capitol Paging's private carrier paging system was equipped with this inhibitor from the beginning of the time

the station first started transmitted its identification and test transmissions until it shut down operations.

Executed this 18 day of January, 1994.

Billy C. McCallister

DIRECT TESTIMONY OF RUSSELL HARRISON ORIGINAL

Russell Harrison hereby states under penalty of perjury as follows:

My name is Russell ("Rusty") Harrison, and I am the manager of the Huntington office of Capitol Radiotelephone Company, Inc. d/b/a Capitol Paging. I have held this position since Capitol's Huntington office was opened in March of 1989. Attached to and made a part of this testimony is a copy of the Declaration I submitted to the FCC in September 1992 in response to the FCC letter stating that Capitol should be fined for improper operation of Capitol's private carrier paging system during August 1991. I still stand behind the statements I made in that declaration.

I am aware that the hearing order in this case claims that "Greenup County Rescue Squad itself never sought any relationship with Capitol for the provision of paging services in connection with its public safety function," that "a few individual members of the Squad sought paging service from Capitol for their own purposes," and that "any testing that occurred related to these individuals took place before the transmissions the Commission monitored on August 12, 13, 14 and 15, 1991 and was not related to these transmissions". I do not know why the hearing order makes these statements, but I do know they are simply wrong.

Executed the 18 day of January, 1994.

Russell Harrison

Federal Communications Commission

Docket No. 93-231 Exhibit No. Cap-22

Presented by Capital

Disposition { Identified FEB 02 [redacted] / Received 2/4/94 / Rejected

Reporter C. Wilmer

Date FEB 02 [redacted]

ORIGINAL

DECLARATION OF RUSSELL ("RUSTY") HARRISON

I, Russell ("Rusty") Harrison, do hereby state that:

1. I am employed by Capitol Radiotelephone Company, Inc. d/b/a Capitol Paging ("Capitol") as the manager of Capitol's common carrier and private paging systems in Huntington, West Virginia, including private carrier paging ("PCP") station WNSX-646 operating on frequency 152.480 MHz. I have held this position since the Huntington office was opened in March of 1989. I am submitting this declaration in response to the letter from the Federal Communications Commission dated July 30, 1992, which claims that Capitol should pay a fine of $20,000 for improper operation of WNSX-646 from August 12-15, 1991.

2. After Capitol got the license for 152.480 MHz in the latter part of 1990, Capitol was contacted by the Greenup County Rescue Squad, which is located near Ashland, Kentucky on the Kentucky-West Virginia border. The Rescue Squad needed paging service which would provide "group call" voice service to 10-15 members on one number, and individual service to each of its members on a second number unique to that member. The Rescue Squad was just getting organized and told me it could not afford Capitol's common carrier service, so I agreed to try to serve them on the new PCP system at a considerably lower rate.

3. Beginning in the Spring of 1990, when Capitol thought the system was ready for commercial operation, Capitol repeatedly attempted to make its PCP work to service the Rescue Squad's "group call" and individual paging requirements. We first tried to make it work with Ashland numbers, then with Huntington

numbers, then with Charleston numbers, and then with 800 numbers. The individual numbers would work, but we could not get the "group call" feature to work. We then tried different "link" frequencies between the terminal in Charleston and the base station near Huntington, because we thought the reason the system was not working properly was that our transmissions were being "walked over" by pages from WNJN-621 licensed to Ram Technologies. However, we never could get the "group call" to work properly and eventually abandoned the attempt sometime in the Fall of 1991.

4. We did a lot of testing of the PCP system while attempting to get the "group call" feature to work for the Rescue Squad. The way it would work is that we would try to get the system to work for a few days, during which we would make repeated tests. Then we would have more pressing things to do and would have to leave things alone for a few weeks or a month or so, and then we would try something different to try to get it to work, and would do some more testing. When that didn't work after a few days, we would again have to stop working on it for another few weeks or month, after which the process would be repeated.

5. I personally tested the group call feature by transmitting actual voice messages. In addition, test pages were also sent by one or more members of the Rescue Squad during this period. I estimate that, to the best of my knowledge, I would manually send about 10 voice pages a day while we were testing, which would enable us to test system operation in different

geographic areas and under different traffic conditions. Generally, these tests were done during the day, although on at least a few occasions I also conducted tests after midnight to see if the problem was being caused by co-channel interference. Additional tests were sent by the Rescue Squad, but I don't know how many.

6. In addition, I would also have the auto-test feature of the Commonwealth terminal put on from time to time during late afternoon, so that I could check system coverage during my drive home from Huntington to Charleston. The auto-test feature would trigger alert-only pages and normally would be set for five minute intervals. I recall that on one occasion during this period my secretary forgot to call Charleston to have the testing turned off before she left for the evening, and the testing continued all night until she came in the next morning.

7. While I do not have specific records of when the testing occurred, I do remember that it was going on around the time that the FCC inspectors visited us in Charleston and inspected the PCP station. I was aware of their visit because I took them around part of the time to show them our facilities. To the best of my recollection, this was also about the time that my secretary forgot to turn off the auto-test during the evening.

8. The testing that Capitol did with its PCP in 1991 was the result of it attempting to make the system work properly and, in particular, the result of trying to get the "group call" feature to work for the Rescue Squad. It was not done to cause any interference to any other licensee and, to my knowledge, the

testing did not interfere with other licensees because we kept an inhibitor on our system. In fact, trying to make the system work for the Rescue Squad in the first place was as much an act of charity as anything, and to have that turned into the accusations in the FCC letter is most unfair and distressing.

9. This Declaration is signed this 29th day of September, 1992 under penalty of perjury under the laws of the United States.

Russell Harrison

CAPITOL RADIOTELEPHONE
COMPANY, INC.

ORIGINAL

DIRECT TESTIMONY OF ARTHUR K. PETERS, P.E.

The firm of Arthur K. Peters, Consulting Engineers, has been retained by Kenneth E. Hardman, Counsel for Capitol Radiotelephone Company, Inc. (Capitol), in the matters of applications of Capitol Radiotelephone, Inc. d/b/a Capitol Paging et al., PR Docket 93-231.

INTRODUCTION

This case mainly deals with allegations made by RAM Technologies, Inc. (RAM) which resulted in the investigation of Capitol by two FCC field engineers and which subsequently was elevated to a more highly controversial status by Commission staff. The case appears to revolve around no more than a few technical and business issues which are widely practiced and relatively routine. In my opinion there seems to be no technical justification for a significant forfeiture or license revocation.

In preparing the testimony for this case I have made no personal contact with anyone in this proceeding except Mr. Ken Hardman, the Counsel for Capitol. My review of the facts of this case relied upon written materials supplied throughout these proceedings including responses to interrogatories, FCC field notes and other documents concerning allegations and counter allegations filed with the FCC and the results and conclusions stated below are based upon my own personal experiences in the paging industry and the information I have reviewed in this

Federal Communications Commission

Docket No. 93-231 Exhibit No. Cap 23

Presented by Capital

FEB 02 1994

Disposition { Identified ____ Received ✓ 2/8/94 Rejected ____

Reporter A. Welch

Date FEB 02 1994

case. Any information I required was requested of Mr. Hardman and supplied by him.

QUALIFICATIONS

I have been engaged in the communications and broadcasting industry since 1956 and have had many associations with clients, the FCC, the FAA and numerous state regulatory agencies throughout my career. After having been a consultant with the firm of Hammett and Edison in San Francisco, I formed my own consulting firm in 1970. Since that time, on a daily basis, the firm has worked with its many clients and has had extensive design, implementation and testing experience of paging systems throughout the world. Through my pioneering efforts in simultaneous FM transmitter paging procedures, the paging industry has grown at a rate of approximately 10 to 20% per year for the past 20 or more years.

I am a full member of the Association of Federal Communications Consulting Engineers (AFCCE) and the IEEE. I am a registered Professional Engineer in the States of Illinois and Florida. I am President of the firm of Arthur K. Peters, Consulting Engineers with offices in Gainesville, Florida. The principal work of the firm is to consult on communications matters with large and small clients, both domestically and abroad; to discuss and advise clients in the implementation and procedural aspects of broadcast and communications systems.

The firm presently represents paging clients which are licensed under Part 22, Radio Common Carriers (RCCs) and under the general Private Carrier Paging

Rules (PCP). Clients range from very small companies to one of the largest paging companies in the world (MobileMedia). Many of our RCC clients have expressed interest in PCP paging in recent years for one or two reasons. I will examine these reasons in some detail later.

Normally, RCC operations require extensive technical submissions before obtaining licenses to prove the absence of interference to other proposed or existing protected RCC operations. On the other hand, applications for PCP operations require very little effort and are routinely granted in a relatively automatic manner because of the requirements for sharing frequencies. Since the regulatory requirements for PCP applications are so reduced, many manufacturers offer free applications if a prospective customer purchases their equipment. While the firm of Arthur K. Peters has processed tens of thousands of RCC applications over the years, the number of PCP applications can be counted in the hundreds and generally have been filed as a courtesy on behalf of our existing RCC clients. There have been occasions where our firm has designed entire PCP facilities for coordinated systems where the potential PCP operator is interested in providing a high-quality service.

The firm of Arthur K. Peters also has extensive experience in the area of propagation of signals in mountainous terrain, such as the terrain in the present case. We also have expertise in the field of antenna design and antenna pattern implementations.

HISTORY OF RELATIONSHIP WITH PARTICIPANTS IN THIS PROCEEDING

I have had numerous associations with and have testified before the FCC, the International Trade Commission and other Federal agencies over the years.

To my best recollection, I have never had any relationship with RAM Technologies, Inc. and with respect to RAM, my knowledge has been obtained only from information generated during this proceeding.

I have been associated with Capitol in previous cases and have provided engineering system designs for it. I have also visited Capitol on previous occasions, both for technical and regulatory matters. I have not had any contact with Capitol concerning this proceeding and did not know of its existence until contacted by Mr. Hardman.

I am personally acquainted with Mr. Dan Stone, Mr. Mike Raymond and Mr. Billy McCallister. My associations with Capitol have always been on a consultant/client basis. However, I do have respect and warm personal regards for these persons and I have never known nor suspected any of them of being anything but ethical and honest.

FREQUENCY AND PROPAGATION CONSIDERATIONS

Capitol decided to get into the PCP paging business in Huntington and Charleston, West Virginia. My experience with propagation in both of these areas is extensive and indicates very difficult propagation conditions. The region is

characterized by very hilly terrain in which the paging target populations reside in narrow, twisting valleys. These conditions are some of the most difficult areas in which to provide reasonable coverage because very few paging receiver locations are directly within line-of-sight of a base station transmitter. Under these circumstances, base station transmitters are generally placed at the highest possible locations and utilize the largest transmitting power because signals which finally reach receivers will have been diffracted and will have lost an inordinate amount of energy between the base station and receiver. VHF frequencies in this type of terrain generally perform better than UHF and low frequencies given identical radiated powers and antenna heights. Although the differences are not severe, every little advantage can mean the difference between serving subscribers at a greater distance or, in the alternative, providing a higher quality of service within a given service range. In the West Virginia hills in this proceeding, it is not uncommon for signal ranges to be limited to a few miles whereas for the same height and power in relatively rolling terrain a distance of 15-20 miles or more can be expected.

When Capitol applied for the PCP frequency 152.48 MHz, it was the only high-power private carrier paging frequency available. Since that time the FCC has added one more frequency which may be used for high-power PCP paging. These frequencies permit even higher antennas and power than RCC operations may use which can likewise translate to either a higher quality of service or a greater service area range when compared with operations available by RCC operations. Moreover, the growth rate on 152.48 MHz was such that networks were being